

the flower expands. If this cap is not at that time in perfect contact with the nucleus by means of a prolongation which it inserts into the exostome, the nucleus itself acquires a sudden and excessive development, and sends out to the cap a long slender process, varying much in form in different genera.

As the direction and structure of the ovule and seed alone constitute fixed characters in the Euphorbiaceæ, the limitation of this order must be modified, both by the addition of new genera hitherto regarded as distinct, and by the exclusion of several others. The species of *Buxus*, and with them *Tricera*, *Sarcococca*, and *Pachysandra*, are in the latter category. The development of their placentation is centripetal; their ovules are anatropous in the direction opposite to those of the Euphorbiaceæ, with the raphe exterior, the micropyle superior and interior. The fleshy production which crowns their seeds is not a micropylar caruncle, but proceeds from the funiculus. On the same grounds, the Stylocereæ, separated from the Euphorbiaceæ, form a small separate group near the Buxææ.

The Antidesmeæ, on the contrary, and the Scepacææ reduced to the genus *Aporosa*, cannot be separated from the Euphorbiaceæ, for they all have the gynæcium of this order at a certain epoch. Their fruit is unilocular and monospermous only through consecutive abortions. The number of loculi, of the seeds, the direction and structure of the latter, present no difference at the outset.

The study of the organogeny has demonstrated the same fact in *Callitriche*, the ovary of which is bilocular and the cells bi-ovulate at first. This arrangement is merely disguised, subsequently, by the appearance of a false septum comparable to that of *Linum*, which produces an ovary with four half-cells, each with one seed.

The order Euphorbiaceæ, as sketched by the author, is therefore enriched by the Scepacææ, Antidesmeæ, and Callitrichaceæ, while it loses the Buxaceæ proper.—*Comptes Rendus*, July 26, 1858.

On 'Hautlé,' or Animal Bread, of the Mexicans.

By M. GUÉRIN-MÉNEVILLE.

In the 'Bulletin de la Société Impériale Zoologique d'Acclimatation,' M. Guérin-Méneville has published a very interesting paper on a sort of bread which the Mexicans call 'Hautlé,' and which is made of the eggs of three species of Hemipterous insects belonging to the group of Water-bugs.

According to M. Craveri, by whom some of the Mexican bread, and of the insects yielding it, were brought to Europe, these insects and their eggs are very common in the fresh waters of the lagunes of Mexico. The natives cultivate in the lagune of Chalco a sort of *Carex* called 'Toulé,' on which the insects readily deposit their eggs. Numerous bundles of these plants are made, which are taken to a lagune (the Tezcuco), where they float in great numbers in the water. The insects soon come and deposit their eggs on the plants; and in

about a month the bundles are removed from the water, dried, and then beaten over a large cloth, to separate the myriads of eggs with which the insects had covered them. These eggs are then cleaned and sifted, put into sacks like flour, and sold to the people for making a sort of cake or biscuit, called 'Hautlé,' which forms a tolerably good food, but has a fishy taste, and is slightly acid. The bundles of *Carex* are replaced in the lake, and afford a fresh supply of eggs, which process may be repeated for an indefinite number of times.

Moreover, says M. Craveri, the Mexicans collect quantities of these insects from the surface of the water by means of hooped nets, and these are dried and sold as food for birds. In Mexico these dried insects are sold in the streets and markets, the dealers crying "Moschitos, Moschitos," just as in Europe they cry "Food for your singing birds."

It appears that these insects have been used from an early period; for Thomas Gage, who sailed to Mexico in 1625, says, in speaking of articles sold in the markets, that they had cakes made of a sort of scum collected from the lakes of Mexico, and that this was also sold in other towns.

Brantz Mayer, in his work on Mexico ('Mexico as it was and as it is,' 1844), says, "On the lake of Tezcucó, I saw men occupied in collecting the eggs of flies from the surface of plants, and cloths arranged in long rows as places of resort for the insects. These eggs, called 'Agayacath,' formed a favourite food of the Indians long before the conquest, and, when made into cakes, resemble the roe of fish, having a similar taste and appearance. After the use of frogs in France, and birds'-nests in China, I think these eggs may be considered a delicacy; and I found that they are not rejected from the tables of the fashionable inhabitants of the capital."

The more recent observations of Messrs. Saussure, Sallé, Virlet d'Arnot*, &c., have confirmed the facts already stated, at least in the most essential particulars.

The insects which principally produce this animal farina of Mexico are two species of the genus *Corixa* of Geoffroy, Hemipterous insects of the family of Water-bugs. One of these species has been described by M. Guérin-Méneville as new, and has been named by him *Corixa femorata*. The other, identified in 1831 by Thomas Say as one of those sold in the markets of Mexico, bears the name of *Corixa mercenaria*.

The eggs of these two species are attached in innumerable quantities to the triangular leaves of the *Carex* forming the bundles which are deposited in the water. They are of an oval form, with a protuberance at one end and a pedicel at the other extremity, by means of which they are fixed to a small round disk, which the mother cements to the leaf.

Among these eggs, which are grouped closely together, and sometimes fixed one over another, there are found others, which are larger, of a long and cylindrical form, and which are fixed to the same leaves.

* Ann. Nat. Hist. 3 ser. vol. i. p. 79.

These belong to another, larger insect, a species of *Notonecta*, which M. Guérin-Méneville has named *Notonecta unifasciata*.—*Pharmaceutical Journal*, Sept. 1, 1858.

New Experiments on Ægilops triticoides. By Dr. GODRON.

Observations made at Montpellier on the awned and awnless forms of *Ægilops triticoides*, which are met with there in a wild state, led the author to regard this plant as a hybrid of *Ægilops ovata* fertilized by the pollen of wheat ("Quelques Notes sur la Flore de Montpellier," Besançon). Desirous of confirming or negating this supposition by direct experiment, Dr. Godron tried, in 1853, to reproduce this vegetable form by artificial fecundation, and in 1854 he obtained plants of *Ægilops triticoides* ("De la Fécondation des *Ægilops* par des *Triticum*," Ann. des Sc. nat. sér. 4. Botanique, ii. p. 218. See also Comptes Rendus, 17 July 1854, and Ann. Nat. Hist. 2nd ser. xiv. p. 394). These facts were confirmed, in 1856 and 1857, by the experiments of MM. Regel in Germany, Vilmorin and Grœnland at Paris, and Planchon at Montpellier. *Ægilops triticoides* is therefore a hybrid plant. The author considers that no doubt can remain on this question. (See Journal of the R. Agric. Soc. of England, xix. part 1. p. 103, 1858.)

Ægilops triticoides is most frequently sterile; but sometimes, though rarely, it affords fertile seeds; and it is these seeds which, in the hands of M. Fabre of Agde, have produced *Ægilops speltæformis*. As Dr. Godron could not doubt the exactitude of the facts reported by this skilful and conscientious observer, and was on that account quite convinced that *Ægilops speltæformis* arose from *Ægilops triticoides*, he at first sought to explain this transformation on the foundation of a law accepted by almost all the authors who have studied the physiological phænomenon of hybridity, namely that fertile hybrids return to one of their original types after a certain number of generations. *Ægilops triticoides* seemed to present a new confirmation of this law; *Ægilops speltæformis* is, in fact, more nearly approximate to wheat than *Ægilops triticoides*; and, supposing the law in question to be true, the natural conclusion was, that *Ægilops speltæformis* reverted insensibly to *Triticum vulgare*. The author now doubts much whether that law is solidly established. On the one hand, this return of *Ægilops triticoides* to its male type, through *Ægilops speltæformis*, is so long in coming to pass, that it may be despaired of. On the other hand, the experiments he has made upon hybrids in general, and especially hybrids of *Verbascum* and *Digitalis*, have led him to think that fertile hybrids are ordinarily only produced when they are fecundated anew by one of the two specific types which have given birth to them. All the hybrid plants he has hitherto obtained by artificial fecundation have been sterile, with the exception of flowers which he has fecundated with the pollen either of the male or female parent; he has then mostly obtained fertile seeds, and the product of this new fecundation then approached nearer to the male type.